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ABSTRACT

THE PROBLEM OF THIS INVESTIGATION WAS TO DETERMINE WHETHER THE ASSOCIATION AND COMPETITION BETWEEN BOYS AND GIRLS DURING THE CRUCIAL JUNIOR HIGH SCHOOL YEARS RESULTED IN SIGNIFICANT DIFFERENCES IN THE DEVELOPMENT OF BOYS. FIVE NULL HYPOTHESES WERE PROPOSED WITHIN THE GENERAL PROBLEM: ARE ACADEMIC ACHIEVEMENT, SELF-DISCIPLINE, SELF-CONCEPT, SEX-ROLE IDENTIFICATION, AND ATTITUDE TOWARD SCHOOL (AUTHORITY) DIFFERENT FOR JUNIOR HIGH BOYS AND GIRLS WHO ARE GROUPED BY SEX, AS OPPOSED TO THOSE GROUPED TOGETHER? A TOTAL OF 300 STUDENTS PARTICIPATED IN THIS STUDY. CONCLUSIONS DRAWN FROM THIS STUDY INCLUDE THAT ALL FIVE OF THE NULL HYPOTHESES TESTED BY THE STUDY WERE SUPPORTED BY THE TREATMENT OF ANALYSIS OF COVARIANCE. THE FEW SIGNIFICANT DIFFERENCES ATTRIBUTED TO THE INTERACTION OF THE DEPENDENT VARIABLES AND THE GROUPING EFFECT WERE JUDGED TO BE SPURIOUS. THE FINDINGS WERE THAT GIRLS IN GENERAL HAVE A MORE POSITIVE ATTITUDE TOWARD SCHOOL, RECEIVE BETTER GRADES AND ACHIEVE HIGHER IN SCHOOL STUDIES RELATED TO LANGUAGE ARTS, IRRESPECTIVE OF AGE, GRADE, OR ASSIGNED GROUP. (AUTHOR/KJ)

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SUMMARY

Early adolescent girls are from a year and a half to two years ahead of boys in physical maturity; research shows that girls have more positive attitudes toward school, get higher grades, and are viewed more favorably by teachers. The problem of this investigation was to determine whether the association and competition between boys and girls during the crucial junior high school years resulted in significant differences in the development of boys. Five null hypotheses, tested at the .05 level of confidence, were proposed within the general problem: Are academic achievement, self-discipline, self-concept, sex-role identification, and attitude toward school (authority) different for junior high boys and girls who are grouped by sex, as opposed to those grouped together?

Three hundred junior high students from two northern Illinois communities participated in the study--all of the seventh and eighth graders at the University Junior High School (mean IQ, 121.5) of Northern Illinois University at DeKalb, Illinois, and six sections of seventh and eighth graders from the Junior High School at Belvidere, Illinois, (Mean IQ, 107.5). Students in experimental sections were grouped by sex in English, social studies, mathematics and science.

Pretests (September, 1967) and Post-tests (May, 1968) chosen to test the hypotheses were standardized achievement tests, the California Test of Personality, and the Ellis-Many-Frey Self-Concept Scale, Form J.

All five of the null hypotheses tested by the study were supported by the treatment of analysis of covariance. The few significant differences attributed to the interaction of the dependent variables and the grouping effect were judged to be spurious. The findings of the study were in essential agreement with the literature of early adolescence--that is, that girls in general have a more positive attitude toward school, receive better grades, and achieve higher in school studies related to language arts, irrespective of age, grade or assigned group.

It was concluded that same sex grouping resulted in no significant differences in academic achievement, self-discipline, self-concept, sex role identification and attitude toward school between the boys and girls participating in the study. Further research using similar procedures, controlling the teacher variable, and extending over a much longer period of time is recommended.

INTRODUCTION

Background. In the culture of North America, the period in the human life span that is known as pubescence or early adolescence is often one that is frought with rapid change and much frustration for the individual. For most, it is a time for breaking away from childhood and embarking upon new behavior patterns and roles that call for considerable adaptations. This period is characterized by changes which confront the individual with new developmental tasks in the area of his or her intellectual, social, emotional, moral, self and physical development. The effectiveness of learning to cope with these tasks influences subsequent behavior, and may leave an enduring impression on the personality. (Havighurst, 1948)

Since early in this century, many of our schools have made arrangements to accommodate the characteristics of this age group. Indeed, it is the uniqueness of the twelve through fourteen year old group that yielded a rationale and gave rise to the junior high school movement in the United States.

One continuing concern of those working with early adolescents is the difference in maturity between boys and girls at this age. It is generally assumed that the year to year and one-half advance in maturity which girls have over boys at this level works to the detriment of boys, especially when boys must associate and compete with girls in an environment that is generally dominated by feminine values and behavior. Does the association and competition between boys and girls in the classroom at the seventh and eighth grade level result in significant differences in the development of boys and girls? It is to this question that the study reported here was addressed.

The Problem. Are academic achievement, self-discipline, self-concept, sex role identification, and attitude toward school different for seventh and eighth grade boys and girls who are enrolled in classes of the same sex, as opposed to those grouped together?

The Objective. The study reported here investigated the very important question raised in the preceding paragraph and which confronts administrators, counselors, and teachers who are responsible for the formal education of early adolescents. The specific purpose of the study was to determine the relationship between attendance in the seventh and eighth grade classes of the same sex and the five variables specified in the above statement of the problem.

Hypotheses. The following five null hypotheses were tested by the study at the .05 level of confidence.

> Hypothesis I. There is no significant difference in academic achievement between a group of junior high school boys and girls after one year in classes of the same sex.

Hypothesis II. There is no significant difference in self-discipline between a group of junior high school boys and girls after one school year in classes of the same sex.

Hypothesis III. There is no significant difference in report of self-concept of ability between a group of junior high school boys and girls after one school year in classes of the same sex.

Hypothesis IV. There is no significant difference in sex role identification between a group of junior high school boys and girls after one school year in classes of the same sex.

Hypothesis V. There is no significant difference in attitudes toward school between a group of junior high school boys and girls after one year in classes of the same sex.

REVIEW OF RELATED LITERATURE

American educators have expressed a great deal of concern about meeting individual differences in the classroom, but the most significant individual differences of all--sex--has received little attention.[1] Instead, coeducational classroom grouping has been taken for granted in American schools, although no empirical evidence exists to show that it is superior to single-sex grouping in meeting any of the educational purposes assumed by American schools. When questioned at all, coeducational classroom organization has been justified by statements that it is "realistic," economically advantageous, a wholesome socializing experience for both sexes, and has been the best way to provide equal educational opportunity for women.[2]

Havighurst, among others, has investigated the "developmental tasks" faced by boys and girls in our culture.[3] These tasks are demands, or expectations, that society places on boys and girls in our culture at successive age levels. Psychologists are generally agreed that the early adolescent must meet each age-level task successfully in order to proceed on to a related task or expectation at the next level. When these tasks remain unmet, the individual is likely to proceed on to new demands and challenges in the development of a wholesome and mature personality. Early adolescence is a crucial period for the development of sex-role identifications. The changing from rural to industrial society in the United States has obscured traditional sex roles. Moynihan has documented the difficulty lower-class boys have in building a masculine image of themselves when fathers are absent.[4] This can be a problem for middle class boys, too, when fathers' occupations seem vague to them, when fathers leave home early in the morning and return late at night, leaving boys in a feminine-dominated community for most of the day. For many of these tasks of early adolescence, a feminine-dominated schoolroom would seem to be an inadequate atmosphere for most boys to meet developmental tasks successfully.

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[1] Kolesnik, Walter B. "Sex Differences and Education," America, 108:552-555, April, 1963.

[2] Woody, Thomas. A History of Women's Education in the United States. Vol. II. 2 vols. New York: The Science Press, 1929.

[3] Havighurst, Robert J. Developmental Tasks and Education. University of Chicago Press, 1948.

For a number of years many psychologists, sociologists, and educators have raised questions about the possible effects of co-educational grouping on boys, especially in the early adolescent period. At this time during the junior high school years, girls are from a year and a half to two years ahead of boys in physical maturation. This is reflected not only in poorer written work because of the maturational lag in hand coordination, but also in the development of social and verbal skills. Gaertner reported that this is recognized in European schools, where it is possible in sex-segregated schools to gear materials to the less mature boys.[5]

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[4] Moynihan, Daniel. The Negro Family. Washington, D. C. Superintendent of Documents, Government Printing Office, 1966.

Margaret Mead has long pointed out the problems presented by coeducation:

> This relative advancement lasts through college, and it isn't until graduate school that the boys catch up with girls. We are dealing with a serious discrepancy here and our nation of coeducation by chronological age is not coming to terms with the biological facts.[6]

Grambs and Waetjen have pointed out that while educators have professed a continuing concern for meeting individual differences, sex differences in cognitive modes of thinking have largely been ignored. Social class differences in learning styles are beginning to be discussed in the literature, but questions are still rare that ask if the kinds of teaching methods we use and testing methods we emphasize may in fact concentrate on the kinds of thinking and conceptualizing more frequently found in girls. The fact that these learning styles are not genetic, but culturally developed until they are quite pervasive at early adolescence is, of course, immaterial.[7]

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[5] Gaertner, Johannes A. "Coeducation Reconsidered," Education, 82:118-122, October, 1961.

[6] Mead, Margaret. "The Early Adolescent in Today's American Culture and Implications for Education," Junior High School Newsletter, 1:1-6, February, 1963.

In almost all studies reviewed, underachieving boys outnumbered underachieving girls. About two-thirds of school retentions are boys.[8] Educators have suggested several reasons for this. In addition to the boys' maturational lag, and the use of methods and materials more suitable for girls' learning style, mentioned above, teacher attitude and curriculum content may be significant factors. Boys are aware that teachers seem to prefer girls in the classroom.[9] Some educators have suggested that different emphases should be placed on subjects like biology, geography, history and language for boys and girls.[10]

Sex differences are most intense during adolescence.[11] Kolesnik noted that:

> ...while the majority of administrators would

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[7] Grambs, Jean D. and Walter B. Waetjen, "Being Equally Different," National Elementary Principal, SLVI, No. 2, 1966.

[8] Teigland, John J., and Ronald C. Winkler. "Is Underachievement Basically a Male Problem?" Personnel and Guidance Journal, 44:430-431, December, 1965.

[9] Meyer, William J. and George G. Thompson. "Sex Differences in the Distribution of Teacher Approval and Disapproval Among Sixth-Grade Children," Journal of Educational Psychology, 47:385-396, December, 1965.

[10] Grambs and Waetjen, op. cit.

> undoubtedly accept the proposition that one of the basic developmental tasks is the learning of an appropriate sex role, they are unwilling or unable to perceive that there are two different roles to to learned in different ways.
>
> . . . .
>
> ...In the early elementary grades, where the vast majority of teachers are likely to be women, boys and girls alike begin to form their impressions of the school as a continued feminine environment.[12]

One way of asserting a masculine role is to reject the educational experience, which boys perceive as feminine. In one study, elementary school children were asked to assign "masculine" or "feminine" values to common schoolroom objects like blackboard, desk, and book. Most were thought to be "feminine".[13] Meyer and Thompson report that the male sex role, as perceived by boys, includes "certain kinds of aggressive behaviors" which are permitted by the school.[14] Reporting on an experiment with urban middle class fourth graders, Minuchin reported that girls consistently showed a more positive attitude toward school than boys.[15]

Reviewing a wide bibliography of physiological and psychological studies, Bentzen concluded that "...among school-age children, boys tend to be biophysically less mature than girls of the same chronological age, and that, finally, sex ratios reported in studies of a wide range of learning and behavior disorders include a significantly higher proportion of males than females."[16]

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[12] Kolesnik, op. cit.

[13] Kagan, Jerome, "The Child's Sex Role Classification of School Objects," Child Development, 35:1051-56, December, 1964.

[14] Meyer and Thompson, op. cit.

[15] Minuchin, Patricia B. "Sex Differences in Children: Research Findings in an Educational Context," National Elementary Principal, 46:45-48, November, 1966.

While testing instruments presently available show no difference between the sexes in basic intelligence, achievement tests generally show girls superior in language skills, boys in arithmetic reasoning and science.[17] A review of the literature shows these results to be consistent, and some studies are quite impressive. Pauly, for example, found that of almost 30,000 Tulsa pupils in grades 2-8, given a reading test on a given day, girls' reading scores were four months ahead of boys at the second grade level, and had increased to over six months in grade 8. In the eighth grade, girls were almost two months younger, on the average, than the boys.[18]

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[16] Bentzen, Frances. "Sex Ratios in Learning and Behavior Disorders," *National Elementary Principal*, 46:13-17, November, 1966.

[17] Terman, Lewis M. and Leona E. Tyler. "Psychological Sex Differences," *Manual of Child Psychology*. Edited by Leonard Carmichael. Chapter XVII, 1064-1114. New York: John Wiley and Sons, Inc., 1954.

Tyler, F. "Individual and Sex Differences," *Encyclopedia of Educational Research*. Third edition. Edited by Chester W. Harris, 680-8[illegible]. New York: The MacMillan Company, 1960.

Tyler, Leona. *The Psychology of Human Differences*. Third edition. New York: Appleton-Century-Crofts, 1965.

There is also substantial evidence indicating that boys receive lower grades than girls. Kremer reviewed 35 studies undertaken between 1935-1965 and reported this to be true.[19]

Tyler summarized another group of studies and concluded that "the evidence from numerous studies of sex differences in school achievement is remarkably consistent in one respect: girls are assigned higher grades by their teachers than boys are."[20] Despite this body of research that seems to indicate coeducation's negative effect on boys, the investigators found few empirical studies that would attempt to evaluate the commitment to coeducation at the junior high level. Most of the studies supporting sex-segregated classes have appeared in parochial educational journals, and are in the nature of justifying established practice.

Nor until the December, 1966, issue of The Elementary Principal was published was much attention focused on possible disadvantages of a grouping pattern most American educators take for granted. This journal summarized a number of research projects where students had been grouped by sex. Broome Junior High School, located in a low-income area of Rockville, Maryland, experimented with sex-segregated classes and found that male students in these classes had fewer inhibitions and seemingly less need to prove their masculine superiority by "tough, aggressive behavior." Lyles reported fewer discipline problems, happier, more cooperative and outgoing students, and better attendance in classes segregated by sex in Wakefield Forest Elementary School, Fairfax County, Virginia. Boys' academic achievement in language arts and mathematics improved. Given the opportunity to choose whether to be in similarly-grouped classes for a second year, most boys at this school preferred another year of grouping.[21]

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[18] Pauly, Frank R. "Let's Give Boys a Break," Phi Delta Kappan, 40:281-283, April, 1959.

[19] Kremer, Bruce J. "Is Coeducation Unfair to Boys?" Catholic School Journal, 65:37-39, October, 1965.

[20] Tyler, F., op. cit.

Our coeducational grouping pattern that forces boys into premature competition is probably not fair to girls, either. Grambs noted that "it is not right to deny girls a full development of their intellectual powers by keeping them to the lower level of the more slowly-maturing boys."[22] Mead has described the unwholesome habits many girls develop, especially in early adolescence, of downgrading their own academic efforts in order to be popular with and accepted by boys.[23]

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[21] Lyles, Thomas B. "Grouping by Sex," National Elementary Principal, 46:38-41, November, 1966.

[22] Grambs, op. cit., p. 119.

The popular press, too, has expressed interest in sex differences in learning and school behavior, as indicated by an article in the December 16, 1966, issue of Time. This article was concerned principally with a review of the November, 1966, issue of The National Elementary Principal which had devoted most of this issue to a discussion of sex differences in the elementary school. Reviewing the research related to this problem, Jack Epstein, a former Baltimore principal, asked:

> Does this suggest that we ought to experiment more with classes segregated according to sex? ...It seems to me that we should do some research on the effects of separate classes for boys and girls. ...I submit that we don't have any real evidence yet on this question and that we need some definite research.[24]

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[23] Mead, Margaret. op. cit., 1:1-6.

[24] Epstein, Jack. "Sex Differences in the Elementary School," NEP, XLVI, No. 2, November, 1966.

SIGNIFICANCE OF THE STUDY

The review of the literature for this problem revealed the interest and concern educators and psychologists have had for experiments in classes segregated by sex for early adolescents. Such grouping, a departure from the common practice in American schools, poses difficult scheduling problems which most schools, for one reason or another, do not feel in a position to undertake. It was expected that the results of this study would be of value to school administrators, teachers, counselors, and psychologists as bases for understanding the early adolescent student and for making decisions regarding classroom grouping at this level. The findings should lead to additional hypotheses and directions for further research in the area of same-sex grouping for early adolescents.

METHOD OF THE STUDY

Design. The investigation adhered to the pretest posttest control group experimental design with groups randomly selected.* (See Table I.)

TABLE I
MODEL OF THE DESIGN OF THE STUDY

R	0_1	X_1	0_2, a,b,c,
R	0_3	X_2	0_4, a,b,c,
R	0_5		0_6, a,b,c,

Where R = random assignment of students to comparison groups*
Where X_1 = experimental treatment for boys
Where X_2 = experimental treatment for girls
Where O_1, O_3, O_5 = pretests for boys, girls, and control groups respectively
Where O_2, O_4, O_6 = posttests for the respective groups

* For some students practical scheduling problems necessitated a deviation from strict randomization procedures.

Population. In the spring of 1967, permission was secured to carry out this research study in the seventh and eighth grades of two northern Illinois junior high schools: the University Junior High School, a part of the College of Education at Northern Illinois University at DeKalb, and the junior high school at Belvidere, Illinois.

Northern Illinois University is a rapidly growing state university located sixty miles west of Chicago. Formerly exclusively a teacher-training institution, it is now a multi-purpose university with an enrollment of over 20,000 students, offering graduate programs through the doctorate in several areas. The University Junior High School, grades 7-9, is a part of a laboratory school consisting of grades K-9. The junior high school enrolls 225 students. Approximately forty percent of these pupils are children of faculty members. The school population is generally upper middle class and recruited from the executive and professional class in DeKalb. This is reflected in standardized test scores, especially by the California Test of Mental Maturity. (See

Table II.)

TABLE II
CALIFORNIA TEST OF MENTAL MATURITY MEAN SCORES:
UNIVERSITY JUNIOR HIGH SCHOOL

	N	Mean IQ	SD
Grade 7	71	122.5	11.1
Grade 8	71	120.6	10.6
	142		

All 142 seventh and eighth graders in the school participated in the study. They were randomly assigned to eight same-sex and control groups.

Unequal numbers of boys and girls in each grade made it necessary to schedule two experimental sections each of seventh grade boys and eighth grade girls. Class size ranged from 16-25. Classes were kept together for English, social studies, mathematics, and science. Whenever possible, male faculty were assigned to all-boy sections and females to all-girl sections. At the University Junior High, this assignment was possible for all subjects except science and mathematics, where all faculty were men, and one semester of English for 8th grade boys. Altogether, nine teachers were involved in teaching the eight classes involved in this study.

Belvidere, Illinois, is a farming-industrial community of 12,000 people twenty-five miles from DeKalb. There is one junior high school enrolling about 900 students. Six of the thirty sections at the school, consisting of 140 seventh and eighth graders, participated in the study. This school community presented a more representative cross-section of the general population than did the University Junior High. Less than 10% of the parents could be classified in the professional or executive class and just 6% attended college. I.Q. scores are taken from the Otis Quick Score Test administered in seventh grade. (See Table III.)

TABLE III
OTIS QUICK SCORE TEST MEAN SCORES:
BELVIDERE JUNIOR HIGH SCHOOL

	N	Mean IQ	SD
Grade 7	75	107	7
Grade 8	73	108	6.9

Because of scheduling difficulties, involving participation in band and chorus, it was impossible to select students for the experimental sections randomly. Furthermore, it was not possible to match male teachers with all-boy classes, and female teachers with the girls' sections. Virtually all of the English teachers were females, while nearly all teachers in the social studies, science, and mathematics area were men. In Table IV the ratio of sex of teacher to classes taught for both schools is presented.

TABLE IV
TEACHER SEX AND CLASSES TAUGHT IN EXPERIMENTAL AND CONTROL GROUPS

University Junior High School

	English	Mathematics	Social Studies	Science
7G	F	M	F	M
7B1	M	M	M	M
7B2	M	M	M	M
7Control	F	M	M	M
8G1	F	M	F	M
8G2	F	M	F	M
8B	M	M	M	M
8Control	F/M	M	F	M

TABLE V
TEACHER SEX AND CLASSES TAUGHT IN EXPERIMENTAL AND CONTROL GROUPS

Belvidere Junior High School

	Literature	English	Math	Social Studies	Science
7G	F	F	M	M	M
7B	F	F	M	M	F
7Control	F	F	M	M	M
8G	M	F	M	M	M
8B	F	F	M	M	M
8Control	F	F	M	M	M

Belvidere Junior High has a three-track grouping system; all six sections in each grade were selected from the average track. Class size ranged from 21-24; as at the University Junior High School, the classes stayed together for English, mathematics, social studies, and science. At Belvidere, two full periods are devoted to "English"; literature and English grammar are taught separately.

Controls. Course content, materials, general teaching style and time involved were similar for all students in the study. The experimental treatment was constant for all experimental groups. Application of analysis of covariance in treatment of the data provided additional statistical controls. Furthermore, data gathered from the students by interviews was obtained by a member of the research staff of the same sex as the student.

Data. In addition to measurement of the dependent variables using the instruments of the study, data relating to each dependent variable were obtained from the students' records and from the teachers and counselors who were responsible for these students. Data were collected by the researchers using interviews as well as the instruments described below.

Analysis of Data. Data were placed on cards and processed by electronic computer. Statistical treatment included a comparison of the differences between the means of the experimental and control groups by application of analysis of covariance. More specifically, a 2 x 2 x 2 factorial design was used to enable comparisons of the main effects of class grouping, sex, grade level, and the interaction effects of these independent variables upon the criterion measures. Each of the five null hypotheses was tested in this manner. Attention was directed to change differences for groups as well as to differences between and among group means.

Due to the distinct differences in the nature of the student bodies of Belvidere Junior High School and the University Junior High School, data were treated and presented separately for each school. This resulted in a report which in effect presents the findings of two studies.

Variables and Experimental Treatment. The independent variable was the same-sex class organization for seventh and eighth grade students over a period of one school year. The treatment involved classes in English, mathematics, social studies, science and physical education, or approximately five-sixths of the students' school day. Dependent variables were academic achievement, self-discipline, self-concept report, sex-role identification and attitudes toward school.

Instruments. Dependent variables were measured by pretests and posttests. Pretests were administered in September, 1967, and posttests in May, 1968. Additionally, data were collected from student records and by interviews with students and school personnel.

Academic Achievement

(1) Achievement Tests

Iowa Tests of Basic Skills, Form 1, 1964.

Test V	Vocabulary
Test R	Reading Comprehension
Test L	Language Skills
L1	Spelling
L2	Capitalization
L3	Punctuation
L4	Usage
Test W	Work-Study Skills
W1	Map Reading
W2	Reading Graphs and Tables
W3	Knowledge and Use of References
Test A	Arithmetic Skills
A1	Arithmetic Concepts
A2	Arithmetic Problem Solving

(administered to seventh and eighth graders at University Junior High School, DeKalb)

Metropolitan Achievement Tests, Advanced Battery.

Test 1	Word Knowledge
Test 2	Reading

- Test 3 Spelling
- Test 4 Language
  - Part A Usage
  - Part B Punctuation and Capitalization
  - Part C Kinds of Sentences
  - Part D1 Parts of Speech
  - Part D2 Grammar
- Test 5 Language Study Skills
- Test 6 Arithmetic Computation
- Test 7 Arithmetic Problem Solving and Concepts
- Test 8 Social Studies Information
- Test 9 Social Studies Study Skills
- Test 10 Science

(administered to seventh graders at Belvidere Junior High School)

Stanford Achievement Test, (Advanced Complete Battery), Form X.

- Test 1 Paragraph Meaning
- Test 2 Spelling
- Test 3 Language
  - Part A Usage
  - Part B Punctuation
  - Part C Capitalization
  - Part D Dictionary Skills
  - Part E Sentence Sense

Test 4	Arithmetic Computation	
Test 5	Arithmetic Concepts	
Test 6	Arithmetic Applications	
Test 7	Social Studies	
	Part A	Content
	Part B	Study Skills
Test 8	Science	

(administered to eighth graders at Belvidere Junior High School)

(2) Report card grades in language arts, social studies, mathematics and science.

Self-Discipline

"Self-Reliance Scale," California Test of Personality,
Classroom teacher evaluation, (Appendix B),
Interview data sheet, (Appendix C).

Self-Concept

"Total personal adjustment score," California Test of Personality (sum of 7 subscores),
"Personal worth" scale, California Test of Personality,
"Ellis-Many Self-Concept Scale," Form J,
Classroom teacher evaluation, (Appendix B),
Interview data sheet, (Appendix C).

Sex-Role Identification

Task 1, "Ellis-Many Self-Concept Scale," Form J: Achieving Mature Relationships with Members of the Opposite Sex.

Task 2, "Ellis-Many Self-Concept Scale," Form J: Achieving A Masculine-Feminine Social Role.

Task 3, "Ellis-Many Self-Concept Scale," Form J: Achieving A Wholesome Attitude Toward One's Growing Body.

Total "Social Adjustment Score," California Test of Personality (sum of 7 subscores)

Classroom teacher evaluation, (Appendix B).

Interview data sheet, (Appendix C).

Attitude Toward School and Authority

Task 10, Ellis-Many Self-Concept Scale, Developing Skills Necessary for Civic Competence.

Task 9, Ellis-Many Self-Concept Scale, Attitudes Toward Social Groups and Institutions.

School Relations Scale, California Test of Personality.

Classroom teacher evaluation, (Appendix B).

Interview data sheet, (Appendix C).

LIMITATIONS OF THE STUDY

When interpreting the results of this study, one should consider that the study extended over a period of only one school year and involved only three-hundred seventh and eighth grade students. The experimental groups spent approximately five-sixths of the school day in sex segregated settings. Although some effort was made to assign boys and girls in the experimental classes male and female teachers respectively, no control was exercised over the teacher factor.

The two communities and schools and the students participating in the study were representative of small town, middle-middle class and upper-middle class, white, mid-western America.

The limited state of development of instrumentation for gathering the necessary data posed inherent limitations on the study.

FINDINGS AND ANALYSIS

The findings and analysis are presented separately for the two schools involved in the study. The presentation is based on the five hypotheses tested and includes the results of the statistical treatment of the data and interpretations for each hypothesis for each school.

Hypothesis I: There is no significant difference in academic achievement between a group of junior high school boys and girls after one year in classes of the same sex.

University Junior High School. (Tables VI-1 - VI-15). On the basis of the treatment of the data by seventeen analyses of covariance and one analysis of variance the null hypothesis was supported for the students at the University Junior High School. Data from standardized achievement tests and teacher assigned marks were obtained to test the hypothesis. For only two of the treatments were statistically significant differences attributable to the experimental treatment found.

An examination of TABLE VI-11 indicates that boys in the control groups did better, regardless of the grade that they were in, than did boys in the experimental groups in both grades seven and eight and better than did the girls in the control groups. (See TABLE VI-11A). Also, statistically significant differences (interaction effects) were found in a three-way interaction of grade, sex, and grouping for the composite score of the Iowa Test of Basic Skills. (See TABLES VI-1 and VI-1A).

In the experimental groups, contrary to what one would expect, the seventh grade boys made higher achievement scores than did the eighth grade boys. Little difference was found in the girls scores in either group. Although this particular measure resulted in differences that would tend to reject the hypothesis, it should be noted that the differences were not consistent and may be spurious. Furthermore, while they may be meaningful, they are not applicable. Thus, the overall results support Hypothesis I.

Differences were found which concur with the summary of the review of the literature regarding achievement for boys and girls at this age level. The girls did better than the boys on measures of vocabulary, reading, and spelling. (See TABLES VI-2 and VI-4).

Pretest and posttest grade point averages could not be computed for University Junior High School seventh graders, as standardized grades were not assigned the previous year in the sixth grade.

The 8th grade control group received significantly higher grades than either experimental group. (Table VI-34). On this measure, Hypothesis I was rejected.

TABLE VI-1

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (COMPOSITE SCORE)

ADJUSTED POST-TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1.0000	23.4766	23.4766	n.s.
J EFFECT (GRADE)	1.0000	6.5039	6.5039	n.s.
K EFFECT (GROUP)	1.0000	0.0039	0.0039	n.s.
I x J	1.0000	22.4883	22.4883	n.s.
I x K	1.0000	1.8555	1.8555	n.s.
J x K	1.0000	21.4922	21.4922	n.s.
I x J x K	1.0000	169.0781	169.0781	6.5493*
WITHIN	79.0000	2039.4570	25.8159	
TOTAL	86.0000	2284.3555		

*Significant at the .05 level; F required at .01=7.00 and at .05=3.97

TABLE VI-1A

ADJUSTED POST-TEST ITBS MEANS FOR COMPOSITE SCORES

	7th GRADE		8th GRADE	
	Exp.	Cont.	Exp.	Cont.
BOYS	99.00	97.14	95.35	98.65
GIRLS	94.46	98.88	98.72	96.67

TABLE VI-2

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TEST OF BASIC SKILLS (VOCABULARY)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	SS	df	MS	F
I EFFECT (SEX)	3075.4023	1	3075.4023	5.8335*
J EFFECT (GRADE)	18.9766	1	18.9766	n.s.
K EFFECT (GROUP)	7.9062	1	7.9062	n.s.
I x J	96.7773	1	96.7773	n.s.
I x K	86.1836	1	86.1836	n.s.
J x K	32.1602	1	32.1602	n.s.
I x J x K	119.7656	1	119.7656	n.s.
WITHIN	41648.3516	79	527.1941	
TOTAL	45085.5234	86		

*Significant at the .05 level; F required at .01=7.03 and at .05=4.02

TABLE VI-3

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TEST OF BASIC SKILLS (READING COMPREHENSION)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	3303.7734	3303.7734	6.9381*
J EFFECT (GRADE)	1	22.5234	22.5234	n.s.
K EFFECT (GROUP)	1	25.8711	25.8711	n.s.
I x J	1	855.5508	855.5508	n.s.
I x K	1	610.4570	610.4570	n.s.
J x K	1	68.5000	68.5000	n.s.
I x J x K	1	19.7773	19.7773	n.s.
WITHIN	79	37618.0352	476.1775	
TOTAL	86	42524.4883		

*Significant at the .05 level; F required at .01=7.03 and at .05=4.02

TABLE VI-4

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TEST OF BASIC SKILLS (SPELLING)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	2832.8945	2832.8945	6.5532*
J EFFECT (GRADE)	1	613.6523	613.6523	n.s.
K EFFECT (GROUP)	1	146.2891	146.2891	n.s.
I x J	1	58.4375	58.4375	n.s.
I x K	1	90.0625	90.0625	n.s.
J x K	1	962.2539	962.2539	n.s.
I x J x K	1	2.7812	2.7812	n.s.
WITHIN	79	34151.0352	432.2915	
TOTAL	86	38857.4062		

*Significant at the .05 level; F required at .01=7.03 and at .05=4.02

TABLE VI-5

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TEST OF BASIC SKILLS (CAPITALIZATION)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	2439.4687	2439.4687	n.s.
J EFFECT (GRADE)	1	103.8984	103.8984	n.s.
K EFFECT (GROUP)	1	248.3437	248.3437	n.s.
I x J	1	178.2266	178.2266	n.s.
I x K	1	274.4141	274.4141	n.s.
J x K	1	36.2461	36.2461	n.s.
I x J x K	1	20.1484	20.1484	n.s.
WITHIN	79	53992.4414	683.4485	
TOTAL	86	57293.1875		

F required at .01=7.03 and at .05=4.02

TABLE VI-6

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (PUNCTUATION)

ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	166.7227	166.7227	n.s.
J EFFECT (GRADE)	1	1270.5820	1270.5820	n.s.
K EFFECT (GROUP)	1	86.6602	86.6602	n.s.
I x J	1	210.9922	210.9922	n.s.
I x K	1	68.4609	68.4609	n.s.
I x J x K	1	643.0898	643.0898	n.s.
WITHIN	79	51809.6992	655.8188	
TOTAL	86	54423.6523		

F required at .01=7.03 and at .05=4.02

TABLE VI-7

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (USAGE)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	5.0742	5.0742	n.s.
J EFFECT (GRADE)	1	706.8398	706.8398	n.s.
K EFFECT (GROUP)	1	271.3242	271.3242	n.s.
I x J	1	23.8516	23.8516	n.s.
I x K	1	9.1562	9.1562	n.s.
J x K	1	40.1953	40.1953	n.s.
I x J x K	1	155.4062	155.4062	n.s.
WITHIN	79	47101.1836	596.2173	
TOTAL	86	48313.0312		

F required at .01=7.03 and at .05=4.02

TABLE VI-8

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (MAP-READING)

ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	0.0312	0.0312	n.s.
J EFFECT (GRADE)	1	30.6250	30.6250	n.s.
K EFFECT (GROUP)	1	159.9570	159.9570	n.s.
I x J	1	302.1133	302.1133	n.s.
I x K	1	22.2773	22.2773	n.s.
J x K	1	24.6250	24.6250	n.s.
I x J x K	1	13.4805	13.4805	n.s.
WITHIN	79	17782.4258	225.0940	
TOTAL	86	18335.5352		

F required at .01=7.03 and at .05=4.02

TABLE VI-9

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (READING GRAPHS AND TABLES)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	250.2695	250.2695	n.s.
J EFFECT (GRADE)	1	835.4062	835.4062?	n.s.
K EFFECT (GROUP)	1	55.5234	55.5234	n.s.
I x J	1	20.3711	20.3711	n.s.
I x K	1	362.4102	362.4102	n.s.
J x K	1	550.3242	550.3242	n.s.
I x J x K	1	71.4336	71.4336	n.s.
WITHIN	79	18568.9336	235.0498	
TOTAL	86	20714.6719		

F required at .01=7.03 and at .05=4.02

TABLE VI-10

SUMMARY OF ANALYSIS OF COVARIANCE
FOR IOWA TESTS OF BASIC SKILLS
(KNOWLEDGE AND USE OF REFERENCE MATERIALS)

ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	9.5273	9.5273	n.s.
J EFFECT (GRADE)	1	46.3086	46.3086	n.s.
K EFFECT (GROUP)	1	5.1055	5.1055	n.s.
I x J	1	229.6211	229.6211	n.s.
I x K	1	8.4570	8.4570	n.s.
J x K	1	41.7422	41.7422	n.s.
I x J x K	1	18.9219	18.9219	n.s.
WITHIN	79	14337.9453	181.4930	
TOTAL	86	14697.6289		

F required at .01=7.03 and at .05=4.02

TABLE VI-11

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (ARITHMETIC CONCEPTS)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	9.3711	9.3711	n.s.
J EFFECT (GRADE)	1	311.1133	311.1133	n.s.
K EFFECT (GROUP)	1	237.2812	237.2812	n.s.
I x J	1	93.2187	93.2187	n.s.
I x K	1	1552.6953	1552.6953	5.0189*
J x K	1	60.0000	60.0000	n.s.
I x J x K	1	321.4805	321.4805	n.s.
WITHIN	79	24439.7617	309.3640	
TOTAL	86	27024.9219		

*Significant at .05 level; F required at .01=7.03 and at .05=4.02

TABLE VI-11A

ADJUSTED POST TEST ITBS MEANS FOR ARITHMETIC CONCEPTS

	EXPERIMENTAL	CONTROL
BOYS	91.13	96.53
GIRLS	96.87	84.65

TABLE VI-12

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (ARITHMETIC PROBLEM-SOLVING)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	593.1875	593.1875	n.s.
J EFFECT (GRADE)	1	0.4297	0.4297	n.s.
K EFFECT (GROUP)	1	22.6484	22.6484	n.s.
I x J	1	63.9453	63.9453	n.s.
I x K	1	533.8437	533.8437	n.s.
J x K	1	124.3633	124.3633	n.s.
I x J x K	1	207.8320	207.8320	n.s.
WITHIN	79	27650.8203	350.0103	
TOTAL	86	29197.0703		

F required at .01=7.03 and at .05=4.02

TABLE VI-13

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (LANGUAGE SKILLS COMPOSITE SCORE)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	525.7148	525.7148	n.s.
J EFFECT (GRADE)	1	66.3906	66.3906	n.s.
K EFFECT (GROUP)	1	138.2344	138.2344	n.s.
I x J	1	184.0117	184.0117	n.s.
I x K	1	103.1289	103.1289	n.s.
J x K	1	354.8047	354.8047	n.s.
I x J x K	1	279.1719	279.1719	n.s.
WITHIN	79	18601.8555	235.4665	
TOTAL	86	20253.3125		

F required at .01=7.03 and at .05=4.02

TABLE VI-14

SUMMARY OF ANALYSIS OF COVARIANCE FOR IOWA TESTS OF BASIC SKILLS (WORK-STUDY SKILLS COMPOSITE SCORE)

ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	29.1562	29.1562	n.s.
J EFFECT (GRADE)	1	32.8750	32.8750	n.s.
K EFFECT (GROUP)	1	37.9180	37.9180	n.s.
I x J	1	73.8633	73.8633	n.s.
I x K	1	102.5977	102.5977	n.s.
J x K	1	106.8984	106.8984	n.s.
I x J x K	1	4.5508	4.5508	n.s.
WITHIN	79	14553.8320	184.2257	
TOTAL	86	14941.6914		

F required at .01=7.03 and at .05=4.02

TABLE VI-15

SUMMARY OF ANALYSIS OF COVARIANCE
FOR IOWA TESTS OF BASIC SKILLS
(ARITHMETIC SKILLS COMPOSITE SCORE)

ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	248.8555	248.8555	n.s.
J EFFECT (GRADE)	1	175.5312	175.5312	n.s.
K EFFECT (GROUP)	1	89.3203	89.3203	n.s.
I x J	1	75.3203	75.3203	n.s.
I x K	1	975.2930	975.2930	n.s.
J x K	1	69.9180	69.9180	n.s.
I x J x K	1	231.2617	231.2617	n.s.
WITHIN	79	24872.4219	314.8406	
TOTAL	86	26737.9219		

F required at .01=7.03 and at .05=4.02

Belvidere Junior High School

The Stanford Achievement Test was administered to eighth graders, the Metropolitan to seventh graders. On the basis of the treatment of the data by eighteen analyses of covariance, the null hypothesis was supported for the students at Belvidere Junior High School. (Tables VI-16 - 35).

Eighth grade girls did predictably better in "Paragraph Meaning," a subtest of the general language section; the 7th grade boys performed better on the Science test. These results are in line with other studies referred to in the review of the literature.

A main effect was noted in an analysis of covariance for grade point averages. (Table VI-35). Girls made better grades than boys, irrespective of grade or group. As documented above, this is expected in our schools and was not influenced by the grouping variable. Here, too, the hypothesis was supported.

TABLE VI-16
SUMMARY OF ANALYSIS OF COVARIANCE FOR STANFORD ACHIEVEMENT TEST (PARAGRAPH MEANING) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	400.5195	400.5195	4.1230*
I EFFECT (SEX)	1	144.3281	144.3281	n.s.
K x I	1	14.2148	14.2148	n.s.
WITHIN	57	5537.1094	97.1423	
TOTAL	60	6096.1719		

*Significant at .05 level; F required at .01=7.03 and at .05=4.02

TABLE VI-17
SUMMARY OF ANALYSIS OF COVARIANCE FOR STANFORD ACHIEVEMENT TEST (SPELLING) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	5.6680	5.6680	n.s.
I EFFECT (SEX)	1	353.0000	353.0000	n.s.
K x I	1	141.5625	141.5625	n.s.
WITHIN	57	7129.3711	125.0767	
TOTAL	60	7629.6016		

F required at .01=7.03 and at .05=4.02

TABLE VI-18
SUMMARY OF ANALYSIS OF COVARIANCE
FOR STANFORD ACHIEVEMENT TEST (GRAMMAR)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	42.1328	42.1328	n.s.
I EFFECT (SEX)	1	1.6836	1.6836	n.s.
K x I	1	2.8359	2.8359	n.s.
WITHIN	57	7801.8047	136.8738	
TOTAL	60	7848.4570		

F required at .01=7.03 and at .05=4.02

TABLE VI-19
SUMMARY OF ANALYSIS OF COVARIANCE
FOR STANFORD ACHIEVEMENT TEST (ARITHMETIC COMPREHENSION)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	650.2930	650.2930	n.s.
I EFFECT (SEX)	1	204.7734	204.7734	n.s.
K x I	1	105.6758	105.6758	n.s.
WITHIN	57	13387.5625	234.8695	
TOTAL	60	14348.3047		

F required at .01=7.03 and at .05=4.02

TABLE VI-20

SUMMARY OF ANALYSIS OF COVARIANCE
FOR STANFORD ACHIEVEMENT TEST (ARITHMETIC CONCEPTS)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	292.0078	292.0078	n.s.
I EFFECT (SEX)	1	2.8320	2.8320	n.s.
K x I	1	924.7148	924.7148	n.s.
WITHIN	57	14244.3477	249.9008	
TOTAL	60	15463.9023		

F required at .01=7.03 and at .05=4.02

TABLE VI-21

SUMMARY OF ANALYSIS OF COVARIANCE
FOR STANFORD ACHIEVEMENT TEST (ARITHMETIC APPLICATIONS)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	306.0937	306.0937	n.s.
I EFFECT (SEX)	1	876.7695	876.7695	n.s.
K x I	1	633.6992	633.6992	n.s.
WITHIN	57	14130.2852	247.8997	
TOTAL	60	15946.8477		

F required at .01=7.03 and at .05=4.02

TABLE VI-22
SUMMARY OF ANALYSIS COVARIANCE FOR STANFORD ACHIEVEMENT TEST (SOCIAL STUDIES) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	60.4531	60.4531	n.s.
I EFFECT (SEX)	1	26.9219	26.9219	n.s.
K x I	1	626.8398	626.8398	n.s.
WITHIN	57	13081.6328	229.5023	
TOTAL	60	13795.8477		

F required at .01=7.03 and at .05=4.02

TABLE VI-23
SUMMARY OF ANALYSIS OF COVARIANCE FOR STANFORD ACHIEVEMENT TEST (SCIENCE) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP	1	16.9062	16.9062	n.s.
I EFFECT (SEX)	1	-0.0938	-0.0938	n.s.
K x I	1	51.5859	51.5859	n.s.
WITHIN	57	8010.7812	140.5400	
TOTAL	60	8079.1797		

F required at .01=7.03 and at .05=4.02

TABLE VI-24
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (WORD KNOWLEDGE) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP	1	60.6172	60.6172	n.s.
I EFFECT (SEX)	1	58.0352	58.0352	n.s.
K x I	1	289.1289	289.1289	n.s.
WITHIN	55	8598.9258	156.3441	
TOTAL	58	9006.7070		

F required at .01=7.00 and at .05=3.97

TABLE VI-25
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (READING) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	1.0000	1.0000	n.s.
I EFFECT (SEX)	1	26.6719	26.6719	n.s.
K x I	1	281.7148	281.7148	n.s.
WITHIN	55	12576.6328	228.6660	
TOTAL	58	12886.0195		

F required at .01=7.00 and at .05=3.97

TABLE VI-26
SUMMARY OF ANALYSIS OF COVARIANCE
FOR METROPOLITAN ACHIEVEMENT TEST (SPELLING)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 7

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	11.0312	11.0312	n.s.
I EFFECT (SEX)	1	115.1367	115.1367	n.s.
K x I	1	10.3086	10.3086	n.s.
WITHIN	55	4235.2109	77.0038	
TOTAL	58	4371.6875		

F required at .01=7.00 and at .05=3.97

TABLE VI-27
SUMMARY OF ANALYSIS OF COVARIANCE
FOR METROPOLITAN ACHIEVEMENT TEST (LANGUAGE)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL
STUDENTS, GRADE 7

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	471.0352	471.0352	n.s.
I EFFECT (SEX)	1	251.5820	251.5820	n.s.
K x I	1	5.7695	5.7695	n.s.
WITHIN	55	13612.9023	247.5073	
TOTAL	58	14341.2891		

F required at .01=7.00 and at .05=3.97

TABLE VI-28
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (LANGUAGE STUDY SKILLS) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	REGISTER
K EFFECT (GROUP)	1	137.9336	137.9336	n.s.
I EFFECT (SEX)	1	494.2461	494.2461	n.s.
K x I	1	608.2656	608.2656	n.s.
WITHIN	55	25108.3867	456.5161	
TOTAL	58	26348.8320		

F required at .01=7.00 and at .05=3.97

TABLE VI-29
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (ARITHMETIC COMPUTATION) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	REGISTER
K EFFECT (GROUP)	1	133.7878	133.7878	n.s.
I EFFECT (SEX)	1	46.8518	46.8518	n.s.
K x I	1	5.7556	5.7556	n.s.
WITHIN	55	3843.8958	69.8890	
TOTAL	58	4030.2910		

F required at .01=7.00 and at .05=3.97

TABLE VI-30
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (ARITHMETIC PROBLEM SOLVING AND CONCEPTS) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	REGISTER
K EFFECT (GROUP)	1	81.2773	81.2773	n.s.
I EFFECT (SEX)	1	263.9609	263.9609	n.s.
K x I	1	120.0977	120.0977	n.s.
WITHIN	55	13790.5742	250.7377	
TOTAL	58	14255.9102		

F required at .01=7.00 and at .05=3.97

TABLE VI-31
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (SOCIAL STUDIES INFORMATION) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	160.0703	160.0703	n.s.
I EFFECT (SEX)	1	129.6836	129.6836	n.s.
K x I	1	186.3359	186.3359	n.s.
WITHIN	55	16020.0273	291.2732	
TOTAL	58	16496.1172		

F required at .01=7.00 and at .05=3.97

TABLE VI-32
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (SOCIAL STUDIES STUDY SKILLS) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	REGISTER
K EFFECT (GROUP)	1	214.7812	214.7812	n.s.
I EFFECT (SEX)	1	1299.6836	1299.6836	n.s.
K x I	1	65.5977	65.5977	n.s.
WITHIN	55	18192.0312	330.7642	
TOTAL	58	19772.0937		

F required at .01=7.00 and at .05=3.97

TABLE VI-33
SUMMARY OF ANALYSIS OF COVARIANCE FOR METROPOLITAN ACHIEVEMENT TEST (SCIENCE) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADE 7

ANALYSIS OF VARIANCE TABLE

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP	1	1439.3281	1439.3281	4.9408*
I EFFECT (SEX)	1	277.3320	277.3320	n.s.
K x I	1	208.5078	208.5078	n.s.
WITHIN	55	16022.1211	291.3113	
TOTAL	58	17947.2891		

*Significant at the .05 level; F required at .01=7.00 and at .05=3.97

TABLE VI-34
SUMMARY OF ANALYSIS OF VARIANCE FOR GRADE POINT AVERAGES
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS, GRADE 8

SOURCE	NDF	SS	MEAN SQ	F
K EFFECT (GROUP)	1	13.4233	13.4233	6.4220
I EFFECT (SEX)	1	2.5066	2.5066	n.s.
I x J	1	0.0222	0.0222	n.s.
WITHIN	45	94.0596	2.0902	
TOTAL	48	110.0117		

F required at .01=6.93 and at .05=3.95

TABLE VI-35
SUMMARY OF ANALYSIS OF COVARIANCE FOR GRADE POINT AVERAGES
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS, GRADES 7 AND 8

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	25.3967	25.3967	n.s.
K EFFECT (GROUP)	1	11.2271	11.2271	n.s.
I EFFECT (SEX)	1	41.5605	41.5605	11.2792
I x J	1	10.7126	10.7126	n.s.
I x K	1	1.2485	1.2485	n.s.
J x K	1	8.2070	8.2070	n.s.
I x J x K	1	0.3835	0.3835	n.s.
WITHIN	107	394.2605	3.6847	
TOTAL	114	492.9966		

F required at .01=6.93 and at .05=3.95

Hypothesis II: There is no significant difference in self-discipline between a group of junior high school boys and girls after one school year in classes of the same sex.

University Junior High School. (Tables VII-1 - VII-3). Three measures were used to test this hypothesis: the "Self-Reliance" scale of the California Test of Personality, and Tasks 8 and 11 of the Ellis-Many-Frey "Report of Self-Concept" scale.

Table VII-1 shows that for the University Junior High School the data yielded no significant differences in the appropriate subtest of the California Test of Personality. A main effect was found in student response to Task 11 in that seventh graders had higher scores than eighth graders irrespective of sex or assigned group; however, since grouping was not involved, the hypothesis was supported by this measure. An interaction effect occurred with Task 8 at the seventh grade level where the control group scored higher than either of the experimental groups. Experimental eighth grade groups scored higher than the control group on this measure; thus, the hypothesis was rejected.

Belvidere Junior High School. (Tables VII-4 - VII-6). No significant differences were found when the above three measures were used to test the hypothesis at Belvidere Junior High School. Data reported in Table VII-4 reveals that seventh grade girls scored higher than did seventh grade boys, while eighth grade boys scored higher than did eighth grade girls. As these differences could not be attributed to grouping, Hypothesis II was supported.

TABLE VII-1
SUMMARY OF ANALYSIS OF COVARIANCE FOR
"SELF-RELIANCE" SCALE, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	14.6631	14.6631	n.s.
J EFFECT (GRADE)	1	2.4961	2.4961	n.s.
K EFFECT (GROUP)	1	1.6404	1.6404	n.s.
I x J	1	0.7512	0.7512	n.s.
I x K	1	0.2246	0.2246	n.s.
J x K	1	0.3557	0.3557	n.s.
I x J x K	1	0.0308	0.0308	n.s.
WITHIN	79	375.2866	4.7505	
TOTAL	86	395.4485		

F required at .01=7.00 and at .05=3.97

TABLE VII-2
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 8,
"DESIRING AND ACHIEVING SOCIALLY RESPONSIBLE BEHAVIOR"
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	2116.1250	2116.1250	n.s.
J EFFECT (GRADE)	1	900.1875	900.1875	n.s.
K EFFECT (GROUP)	1	46.3750	46.3750	n.s.
I x J	1	4488.9375	4488.9375	n.s.
I x K	1	24016.8750	24016.8750	4.0859*
J x K	1	10535.6875	10535.6875	n.s.
I x J x K	1	1986.5625	1986.5625	n.s.
WITHIN	79	464356.6250	5877.9297	
TOTAL	86	508447.3750		

*Significant at .05 level; F required at .01=7.00 and at .05=3.97

TABLE VII-3
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 11, "DEVELOPING CONSCIENCE, MORALITY, AND A SCALE OF VALUES TO GUIDE BEHAVIOR"
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	79380.7500	79380.7500	8.7903*
J EFFECT (GRADE)	1	2887.6875	2887.6875	n.s.
K EFFECT (GROUP)	1	1957.9375	1957.9375	n.s.
I x J	1	8862.6875	8862.6875	n.s.
I x K	1	5944.3750	5944.3750	n.s.
J x K	1	322.8125	322.8125	n.s.
I x J x K	1	22818.8125	22818.8125	n.s.
WITHIN	79	713408.3750	9030.4844	
TOTAL	86	835583.4375		

*Significant at .01 level; F required at .01=7.00 and at .05=3.97

TABLE VII-4
SUMMARY OF ANALYSIS OF COVARIANCE FOR "SELF-RELIANCE" SCALE, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	1.1802	1.1802	n.s.
K EFFECT (GROUP)	1	0.7849	0.7849	n.s.
I EFFECT (SEX)	1	4.2253	4.2253	n.s.
J x K	1	9.9131	9.9131	n.s.
J x I	1	37.4114	37.4114	7.4983*
K x I	1	1.0752	1.0752	n.s.
J x K x I	1	0.3423	0.3423	n.s.
WITHIN	103	513.8953	4.9893	
TOTAL	110	559.8276		

*Significant at .01 level; F required at .01=6.93 and at .05=3.95

TABLE VII-5
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 8, "DESIRING AND ACHIEVING SOCIALLY RESPONSIBLE BEHAVIOR"
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	5304.0000	5304.0000	n.s.
K EFFECT (GROUP)	1	878.0000	878.0000	n.s.
I EFFECT (SEX)	1	15817.0000	15817.0000	n.s.
J x K	1	843.0000	843.0000	n.s.
J x I	1	2250.0000	2250.0000	n.s.
K x I	1	7285.0000	7285.0000	n.s.
J x K x I	1	4218.0000	4218.0000	n.s.
WITHIN	103	1273301.0000	12362.1445	
TOTAL	110	1309896.0000		

F required at .01=6.93 and at .05=3.95

TABLE VII-6
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 11, "DEVELOPING CONSCIENCE, MORALITY AND A SCALE OF VALUES"
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	994.0000	994.0000	n.s.
K EFFECT (GRADE)	1	52726.0000	52726.0000	n.s.
I EFFECT (SEX)	1	25356.0000	25356.0000	n.s.
I x J	1	228.0000	228.0000	n.s.
I x K	1	10573.0000	10573.0000	n.s.
J x K	1	926.0000	926.0000	n.s.
I x J x K	1	467.0000	467.0000	n.s.
WITHIN	103	1412029.0000	13709.0156	
TOTAL	110	1503299.0000		

F required at .01=6.93 and at .05=3.95

Hypothesis III: There is no significant difference in report of self-concept of ability between a group of junior high school boys and girls after one school year in classes of the same sex.

University Junior High School (Tables VIII-1 - VIII-4).

The California Test of Personality was used to test this hypothesis. For the purposes of this research, one individual scale, "Sense of Personal Worth," and the three composite scores, "Total Personal Adjustment," "Total Social Adjustment," and the "Total Composite Scores," of all 14 subscores were applied. The data presented in Tables VIII-1 through VIII-4 indicate that no statistically significant differences were found at the University Junior High School.

Belvidere Junior High School (Tables VIII-5 - VIII-8).

Several statistical differences were found when this hypothesis was tested with the above mentioned instrument at Belvidere Junior High School. While the hypothesis was supported--that is, differences could not be attributed to grouping--several differences in main effects were found. Table VIII-6 shows that girls had significantly higher scores than did boys, irrespective of grouping. Seventh grade girls scored higher than 7th grade boys. In the 8th grade, however, boys had higher scores in the measure of total personal adjustment.

As in Table VIII-7, since grouping had no effect on the differences found, total social adjustment scores for the

CTP also supports the hypothesis. Seventh graders scored higher than 8th graders irrespective of sex or group. This same effect was found when "total" adjustment scores were compared. In Table VIII-8, for Total Adjustment, 7th graders scored higher than 8th graders. Seventh grade girls made higher scores than 7th grade boys; 8th grade boys scored higher than 8th grade girls. But here again, grouping had no significant effect.

TABLE VIII-1
SUMMARY OF ANALYSIS OF COVARIANCE FOR
"SENSE OF PERSONAL WORTH" SCALE,
CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	13.8899	13.8899	n.s.
I EFFECT (SEX)	1	0.4956	0.4956	n.s.
K EFFECT (GROUP)	1	4.4878	4.4878	n.s.
J x I	1	2.6697	2.6697	n.s.
J x K	1	5.6880	5.6880	n.s.
I x K	1	0.5076	0.5076	n.s.
J x I x K	1	10.0305	10.0305	n.s.
WITHIN	79	469.7114	5.9457	
TOTAL	86	507.4805		

F required at .01=7.00 and at .05=3.97

TABLE VIII-2
SUMMARY OF ANALYSIS OF COVARIANCE FOR "TOTAL PERSONAL ADJUSTMENT," CALIFORNIA TEST OF PERSONALITY ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	292.9609	292.9609	n.s.
I EFFECT (SEX)	1	22.8008	22.8008	n.s.
K EFFECT (GROUP)	1	45.0234	45.0234	n.s.
J x I	1	9.4883	9.4883	n.s.
J x K	1	139.9492	139.9492	n.s.
I x K	1	10.8086	10.8086	n.s.
J x I x K	1	4.3516	4.3516	n.s.
WITHIN	79	7027.7031	88.9583	
TOTAL	86	7553.0859		

F required at .01=7.00 and at .05=3.97

TABLE VIII-3
SUMMARY OF ANALYSIS OF COVARIANCE FOR
TOTAL SOCIAL ADJUSTMENT, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	0.6445	0.6445	n.s.
I EFFECT (SEX)	1	14.9727	14.9727	n.s.
K EFFECT (GROUP)	1	165.9062	165.9062	n.s.
J x I	1	2.0547	2.0547	n.s.
J x K	1	257.8555	257.8555	n.s.
I x K	1	27.4805	27.4805	n.s.
J x I x K	1	7.4609	7.4609	n.s.
WITHIN	79	8435.7109	106.7811	
TOTAL	86	8912.0859		

F required at .01=7.00 and at .05=3.97

TABLE VIII-4
SUMMARY OF ANALYSIS OF COVARIANCE FOR TOTAL ADJUSTMENT, CALIFORNIA TEST OF PERSONALITY ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	404.4883	404.4883	n.s.
I EFFECT (SEX)	1	116.6289	116.6289	n.s.
K EFFECT (GROUP)	1	18.8047	18.8047	n.s.
J x I	1	28.8906	28.8906	n.s.
J x K	1	771.1680	771.1680	n.s.
I x K	1	83.7656	83.7656	n.s.
J x I x K	1	39.1562	39.1562	n.s.
WITHIN	79	25461.0078	322.2910	
TOTAL	86	26923.9102		

F required at .01=7.00 and at .05=3.97

TABLE VIII-5
SUMMARY OF ANALYSIS OF COVARIANCE FOR "SENSE OF PERSONAL WORTH" SCALE, CALIFORNIA TEST OF PERSONALITY ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	7.2241	7.2241	n.s.
I EFFECT (SEX)	1	17.7280	17.7280	n.s.
K EFFECT (GROUP)	1	12.9446	12.9446	n.s.
J x I	1	4.7036	4.7036	n.s.
J x K	1	21.9275	21.9275	n.s.
I x K	1	13.9824	13.9824	n.s.
J x I x K	1	26.6282	26.6282	n.s.
WITHIN	103	960.9351	9.3295	
TOTAL	110	1066.0735		

F required at .01=6.93 and at .05=3.95

TABLE VIII-6
SUMMARY ANALYSIS OF COVARIANCE FOR TOTAL PERSONAL ADJUSTMENT, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	72.9492	72.9492	n.s.
I EFFECT (SEX)	1	176.5937	176.5937	n.s.
K EFFECT (GROUP)	1	68.5625	68.5625	n.s.
J x I	1	46.3164	46.3164	n.s.
J x K	1	620.8594	620.8594	5.5414*
I x K	1	268.4883	268.4883	n.s.
J x I x K	1	10.3750	10.3750	n.s.
WITHIN	103	11540.0352	112.0392	
TOTAL	110	12804.1797		

*Significant at .05 level; F required at .01=6.93 and at .05=3.95

TABLE VIII-7
SUMMARY OF ANALYSIS OF COVARIANCE FOR TOTAL SOCIAL ADJUSTMENT, CALIFORNIA TEST OF PERSONALITY ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	701.4922	701.4922	7.2248*
I EFFECT (SEX)	1	229.8828	229.8828	n.s.
K EFFECT (GROUP)	1	346.0859	346.0859	n.s.
J x I	1	15.3047	15.3047	n.s.
J x K	1	92.0117	92.0117	n.s.
I x K	1	83.2539	83.2539	n.s.
J x I x K	1	6.1172	6.1172	n.s.
WITHIN	103	10000.6641	97.0938	
TOTAL	110	11474.8125		

*Significant at .01 level; F required at .01=6.93 and at .05=3.95

TABLE VIII-8
SUMMARY OF ANALYSIS OF COVARIANCE FOR TOTAL ADJUSTMENT, CALIFORNIA TEST OF PERSONALITY ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	1310.2070	1310.2070	4.8706*
I EFFECT (SEX)	1	771.7852	771.7852	n.s.
K EFFECT (GROUP)	1	99.6992	99.6992	n.s.
J x I	1	144.4961	144.4961	n.s.
J x K	1	1216.7930	1216.7930	4.5234
I x K	1	695.9102	695.9102	n.s.
J x I x K	1	15.4609	15.4609	n.s.
WITHIN	103	27706.9414	268.9993	
TOTAL	110	31961.2930		

*Significant at .05 level; F required at .01=6.93 and at .05=3.95

Hypothesis IV: There is no significant difference in sex role identification between a group of junior high school boys and girls after one school year in classes of the same sex.

University Junior High School. (Tables IX-1 - IX-3). The three measures selected to test this hypothesis were Tasks 1, 2 and 3 of Form J of the Ellis-Many-Frey "Report of Self-Concept Scale." (Appendix A). Task 1 asked pupils to rate themselves on in-school and out-of-school activities to indicate how well they felt they were achieving new and more mature relationships with age-mates of both sexes. They evaluated aspects of their growth and behavior that were helping them develop an appropriate masculine or feminine sex role in Task 2. Task 3 asked pupils to report their feelings of acceptance about their growing bodies. Items were adjusted for boys and girls, so that no differences were expected in total scores.

The tables on the following pages show that no significant differences were found at the University Junior High School. On these measures, the hypothesis was supported. It will be noted that a main effect occurred in Task 3, where 8th graders scored higher than 7th graders, irrespective of sex or group. This is predictable for adolescents a year older.

Belvidere Junior High School. (Tables IX-4 - IX-6). Tables IX-4 through IX-6 show that no statistically significant differences were found at Belvidere Junior High School when this hypothesis was measured by the above mentioned three instruments. Here, too, the hypothesis was supported.

TABLE IX-1
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 2,
ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	9945.6875	9945.6875	n.s.
J EFFECT (GRADE)	1	5121.5000	5121.5000	n.s.
K EFFECT (GROUP)	1	5834.8750	5834.8750	n.s.
I x J	1	14433.6875	14433.6875	n.s.
I x K	1	5927.6875	5927.6875	n.s.
J x K	1	9502.3750	9502.3750	n.s.
I x J x K	1	109.8125	109.8125	n.s.
WITHIN	79	727652.5000	9210.7891	n.s.
TOTAL	86	778528.1250		

F required at .01=7.00 and at .05=3.97

TABLE IX-2
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 2, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (ACHIEVING A MASCULINE OR FEMININE SOCIAL ROLE) ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	SS	DF	MS	F
I EFFECT (SEX)	11394.2500	1	11394.2500	n.s.
J EFFECT (GRADE)	2259.3125	1	2295.3125	n.s.
K EFFECT (GROUP)	1510.6250	1	1510.6250	n.s.
I x J	3900.1250	1	3900.1250	n.s.
I x K	8879.8750	1	8879.8750	n.s.
J x K	28745.5000	1	28745.5000	n.s.
I x J x K	70.1875	1	70.1875	n.s.
WITHIN	664190.8125	79	8407.4766	
TOTAL	720950.6875	86		

F required at .01=7.00 and at .05=3.97

TABLE IX-3
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 3 ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (BUILDING WHOLESOME ATTITUDES TOWARD ONESELF AS A GROWING ORGANISM) ADJUSTED POST TEST SCORES UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	SS	DF	MS	F
I EFFECT (SEX)	31485.6250	1	31485.6250	3.9873*
J EFFECT (GRADE)	5162.5625	1	5162.5625	n.s.
K EFFECT (GROUP)	1985.5625	1	1985.5625	n.s.
I x J	470.0000	1	470.0000	n.s.
I x K	232.8125	1	232.8125	n.s.
J x K	2076.4375	1	2076.4375	n.s.
I x J x K	628.5000	1	628.5000	n.s.
WITHIN	623809.3125	79	7896.3203	
TOTAL	665850.8125	86		

*Significant at .05 level; F required at .01=7.00 and at .05=3.97

TABLE IX-4
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 2 ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	22459.0000	22459.0000	n.s.
J EFFECT (GRADE)	1	3927.0000	3927.0000	n.s.
K EFFECT (GROUP)	1	16331.0000	16331.0000	n.s.
I x J	1	1614.0000	1614.0000	n.s.
I x K	1	16037.0000	16037.0000	n.s.
J x K	1	921.0000	921.0000	n.s.
I x J x K	1	4762.0000	4762.0000	n.s.
WITHIN	103	1094843.0000	10629.5430	
TOTAL	110	1160894.0000		

F required at .01=6.93 and at .05=3.95

TABLE IX-5
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 2,
ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE
(ACHIEVING A MASCULINE OR FEMININE SOCIAL ROLE)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	SS	DF	MS	F
I EFFECT (SEX)	14596.0000	1	14596.0000	n.s.
J EFFECT (GRADE)	11641.0000	1	11641.0000	n.s.
K EFFECT (GROUP)	1631.0000	1	1631.0000	n.s.
I x J	6263.0000	1	6263.0000	n.s.
I x K	7353.0000	1	7353.0000	n.s.
J x K	4197.0000	1	4197.0000	n.s.
I x J x K	6270.0000	1	6270.0000	n.s.
WITHIN	1287838.0000	103	12503.2812	
TOTAL	1339789.0000	110		

F required at .01=6.93 and at .05=3.95

TABLE IX-6
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 3, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
I EFFECT (SEX)	1	40.0000	40.0000	n.s.
J EFFECT (GRADE)	1	364.0000	364.0000	n.s.
K EFFECT (GROUP)	1	10395.0000	10395.0000	n.s.
I x J	1	1368.0000	1368.0000	n.s.
I x K	1	4703.0000	4703.0000	n.s.
J x K	1	37942.0000	37942.0000	n.s.
I x J x K	1	24228.0000	24228.0000	n.s.
WITHIN	103	1244432.0000	24228.0000	
TOTAL	110	1323472.0000	12081.8633	

F required at .01=6.93 and at .05=3.95

Hypothesis V: There is no significant difference in attitudes toward school between a group of junior high boys and girls after one year in classes of the same sex.

University Junior High School. (Tables X-1 - X-4).
Four instruments were used to test this hypothesis: the "School Relations" scale of the California Test of Personality, Tasks 9 and 10 of Form J of the Ellis-Many-Frey Report of Self-Concept Scale, and responses to the interviewers' question, "How do you like school this year?"

Data in Tables X-1 through X-4 support the hypothesis. No significant differences were found attributable to grouping patterns. Table X-2, however, shows an interesting main effect. Irrespective of grade or group, boys appeared to enjoy school more than girls during this particular year. While the hypothesis was supported on this measure, it is highly significant at the .01 level that boys reported liking school better than girls.

Belvidere Junior High School. (Tables X-5 - X-7).
Table X-5 shows that pupils in the control group scored higher than those in the experimental groups on the School Relations Scale of the California Test of Personality. The difference was significant at the .01 level of confidence, and on the basis of this measure, Hypothesis V was rejected.

The other three instruments yielded data supporting the hypothesis. It should be noted, however, that girls did have a more favorable attitude toward social groups and institutions, irrespective of grade or assigned group, than did the boys. Differences here were significant at the .05 level. This finding is consistent with the research summarized above, indicating girls usually do have more favorable attitudes toward school.

TABLE X-1
SUMMARY OF ANALYSIS OF COVARIANCE FOR
"SCHOOL RELATIONS" SCALE, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	7.1523	7.1523	n.s.
I EFFECT (SEX)	1	4.1624	4.1624	n.s.
K EFFECT (GROUP)	1	0.4602	0.4602	n.s.
J x I	1	3.9978	3.9978	n.s.
J x K	1	12.7573	12.7573	n.s.
I x K	1	9.5532	9.5532	n.s.
J x I x K	1	12.8237	12.8237	n.s.
WITHIN	79	530.1863	6.7112	
TOTAL	86	581.0933		

F required at .01=7.00 and at .05=3.97

TABLE X-2
SUMMARY OF ANALYSIS OF COVARIANCE FOR
ANSWERS TO INTERVIEWER'S QUESTION,
"HOW DO YOU LIKE SCHOOL THIS YEAR?"
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	1.1798	1.1798	n.s.
I EFFECT (SEX)	1	14.7632	14.7632	15.8165*
K EFFECT (GROUP)	1	3.0180	3.0180	n.s.
J x I	1	0.0359	0.0359	n.s.
J x K	1	2.3780	2.3780	n.s.
I x K	1	2.7793	2.7793	n.s.
J x I x K	1	2.5219	2.5219	n.s.
WITHIN	79	73.7355	0.9334	
TOTAL	86	100.4118		

*Significant at the .01 level; F required at .01=7.00 and at .05=3.97

TABLE X-3
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 9, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (DEVELOPING ATTITUDES TOWARD SOCIAL GROUPS AND INSTITUTIONS)
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	36379.6250	36379.6250	n.s.
I EFFECT (SEX)	1	922.4375	922.4375	n.s.
K EFFECT (GROUP)	1	3085.1250	3085.1250	n.s.
J x I	1	901.0000	901.0000	n.s.
J x K	1	12353.0625	12353.0625	n.s.
I x K	1	3102.0625	3102.0625	n.s.
J x I x K	1	15282.3750	15282.3750	n.s.
WITHIN	79	847762.6875	10731.1719	
TOTAL	86	919788.3750		

TABLE X-4
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 10, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (DEVELOPING INTELLECTUAL SKILLS AND CONCEPT NECESSARY FOR CIVIC COMPETENCE)
ADJUSTED POST TEST SCORES
UNIVERSITY JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	13359.5625	13359.5625	n.s.
I EFFECT (SEX)	1	590.5000	590.5000	n.s.
K EFFECT (GROUP)	1	1941.3750	1941.3750	n.s.
J x I	1	7420.3275	7420.4375	n.s.
J x K	1	1170.6250	1170.6250	n.s.
I x K	1	4184.9375	4184.9375	n.s.
J x I x K	1	99.2500	99.2500	n.s.
WITHIN	79	498965.8125	6316.0195	
TOTAL	86	527732.5000		

F required at .01=7.00 and at .05=3.97

TABLE X-5
SUMMARY OF ANALYSIS OF COVARIANCE FOR "SCHOOL RELATIONS" SCALE, CALIFORNIA TEST OF PERSONALITY
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	16.0317	16.0317	n.s.
I EFFECT (SEX)	1	11.2334	11.2334	n.s.
K EFFECT (GROUP)	1	71.4519	71.4519	10.4370*
J x I	1	1.3464	1.3464	n.s.
J x K	1	5.0977	5.0977	n.s.
I x K	1	1.3425	1.3425	n.s.
J x I x K	1	4.0498	4.0498	n.s.
WITHIN	103	705.1418	6.8460	
TOTAL	110	815.6953		

*Significant at .01 level; F required at .01=6.93 and at .05=3.95

TABLE X-6
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 9, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (DEVELOPING ATTITUDES TOWARD SOCIAL GROUPS AND INSTITUTIONS)
ADJUSTED POST TEST SCORES
BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	1007.0000	1007.0000	n.s.
I EFFECT (SEX)	1	89845.0000	89845.0000	5.8798*
K EFFECT (GROUP)	1	48440.0000	48440.0000	n.s.
J x I	1	448.0000	448.0000	n.s.
J x K	1	21351.0000	21351.0000	n.s.
I x K	1	19320.0000	19320.0000	n.s.
J x I x K	1	9938.0000	9938.0000	n.s.
WITHIN	103	1573863.0000	15280.2227	
TOTAL	110	1764212.0000		

*Significant at .05 level; F required at .01=6.93 and at .05=3.95

TABLE X-7
SUMMARY OF ANALYSIS OF COVARIANCE FOR TASK 10, ELLIS-MANY-FREY REPORT OF SELF-CONCEPT SCALE (DEVELOPING INTELLECTUAL SKILLS AND CONCEPTS NECESSARY FOR CIVIC COMPETENCE) ADJUSTED POST TEST SCORES BELVIDERE JUNIOR HIGH SCHOOL STUDENTS

SOURCE	NDF	SS	MEAN SQ	F
J EFFECT (GRADE)	1	6746.0000	6746.0000	n.s.
I EFFECT (SEX)	1	20753.0000	20753.0000	n.s.
K EFFECT (GROUP)	1	1197.0000	1197.0000	n.s.
J x I	1	58.0000	58.0000	n.s.
J x K	1	32011.0000	32011.0000	n.s.
I x K	1	1313.0000	1313.0000	n.s.
J x I x K	1	3914.0000	3914.0000	n.s.
WITHIN	103	1078525.0000	10471.1133	
TOTAL	110	1144517.0000		

F required at .01=6.93 and at .05=3.95

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The study sought to determine the effects of same sex class organization on junior high school students' academic achievement, self-discipline, self-concept, sex role identification, and attitudes toward school. Using a pretest and post-test control group experimental design, seventh and eighth grade students in two northern Illinois junior high schools were the subjects for the investigation of five null hypotheses concerning the variables in the above paragraph. Data were treated by the analysis of covariance over the entire 1967-68 school year.

Conclusions

All of the five null hypotheses tested by the study were supported by the analysis of the data. The few significant differences attributed to the interaction of the dependent variables and the grouping effect were judged to be spurious. Therefore, it can be concluded that in this study, the grouping of seventh and eighth grade students on the basis of sex made no significant difference in academic achievement, self-discipline, self-concept, sex role identification, and attitudes toward school. The findings of the study were in essential agreement with the literature of early adolescence--that is, that girls in general have a more positive attitude toward school, receive better grades, and achieve higher in school studies related to language arts.

Recommendations

1. Decisions about the educational and social values of coeducation vs. same sex education should be deferred until data are more comprehensive and conclusive.

2. Further research is needed, with these specific recommendations:

   a. The duration of the study should be extended to more than a single academic year.

   b. Total schools should be involved. (The investigators found substantial evidence of students in experimental sections feeling socially deprived, when compared to coeducational control groups.)

   c. Male teachers should be assigned to all-boy classes, female teachers to all-girl classes. (The teacher variable seems especially crucial in the areas of language arts, science and mathematics.)

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APPENDICES

APPENDIX A

SAME SEX CLASS ORGANIZATION STUDY

REPORT OF SELF-CONCEPT SCALE

PLEASE DO NOT OPEN BOOKLET UNTIL TOLD TO DO SO

NAME____________________ Boy___ Girl___ Birthdate__________________
Last First Middle I. (check one) Month Day Year

School__________ Teacher__________ Grade___ Today's Date__________________
Month Day Year

City__________ State__________

PLEASE DO NOT WRITE IN THIS SPACE

	1 2 3T		1 2 3T		1 2 3T
Task 1	______	Task 2	______	Task 3	______
Task 4	______	Task 5	______	Task 6	______
Task 7	______	Task 8	______	Task 9	______
Sub T	______			Task 10	______
TOTAL				Task 11	______

REPORT OF SELF-CONCEPT SCALE
(Form J)

We all have an opinion of ourselves. This is usually arrived at in three ways: 1) by comparing ourselves to others our own age; 2) by comparing what we have done to what we feel we can do; and 3) by comparing what we have done to what we feel is needed for success in life.

We are interested in finding out how you feel about yourself--your self-concept. To do this we have prepared this inventory, or group of questions, that we would like you to answer carefully and honestly.

In this inventory, a particular task or job that young people your age face in growing up will be stated first. You will read a paragraph that describes the task and then choose the ONE statement that best describes the way you see yourself in relation to that task. Let's turn to the FIRST page and look at an example.

REPORT OF SELF-CONCEPT SCALE

We all have an opinion of ourselves which is usually arrived at in three ways:

1) By comparing ourselves to others our own age;
2) By comparing our achievements to what we feel we are capable of achieving; and,
3) By comparing our achievements to what we feel is necessary for success in life.

This is an inventory of how you feel about yourself in relation to others, in relation to what you feel you are capable of doing, and in relation to what you believe it takes to be successful in life. In this inventory, a particular task that young people your age face in growing up will be stated first; then you will read a paragraph which describes the task and you will indicate in each of three columns those statements which you feel best describe yourself in relationship to the task. There are ten tasks in this inventory. You will be given ample time to complete them. Please remember to first read the descriptive paragraphs and then to finish the inventory. You may begin.

THE DEVELOPMENTAL TASK OF ADOLESCENCE

SAMPLE TASK - Learning Skills Necessary for Ice Skating

Let's suppose that you lived in a city where everyone had to be a good ice skater before other people would like him, or before he could enter school or even get a job. He couldn't even vote in the city's elections until he could ice skate. You can see how important learning to ice skate would be for all boys and girls in that particular city.

In order to ice skate well, one must learn the skills needed. Some people take lessons from expert skaters while others learn from their family and friends. All, in addition, must spend time practicing on the ice.

Think about this task of learning skills necessary for ice skating and then report the way you see and feel about yourself in relation to developing this task. Do this by circling the number of the ONE statement in EACH of the three columns below which best describes your picture of yourself. Remember, be honest and answer as you feel--not as you think others might want you to answer.

Are there any questions? If not, you may begin. Do all ELEVEN tasks.

The way I see and feel about myself learning those skills necessary for ice skating is:

In relation to what I can do, I am...	1. doing very much less than I could	2. not doing nearly as well as I know I can	3. doing all right without either trying hard or loafing	4. doing well, but not my best	5. doing the very best that I can
In relation to what others do, I am...	1. doing the poorest of the people my age	2. not doing as well as most of the people my age	3. doing all right or about like most of the people my age	4. doing better than most people my age	5. doing the very best of the people my age
In relation to what it takes to be successful at this task, I am	1. doing very poorly and could fail	2. doing less than all right and could have limited success	3. generally doing all right and may be fairly successful	4. doing better than all right and should be successful	5. doing very well and should be an outstanding success

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK I - Achieving New and More Mature Relationships with Age-Mates of Both Sexes

So much of the happiness that you get in life depends upon how well you get along with others. This is true for everyone and it is especially true for boys and girls in junior high school. They generally want to be accepted by other young people their age. They want to belong to one or several groups of friends, and to have close friends with whom they can share their most confidential secrets. Therefore, they are always seeking to improve their relationships with their present friends and to make new friends.

Some young people your age go about this task in a variety of ways: by joining clubs and organizations, by taking part in school activities, and by beginning to go to boy-girl parties. Other things, however, are just as important as being with other young people your own age, things like presenting a neat appearance, being friendly to others, being considered responsible and dependable by others, and maintaining a good reputation.

Now, after thinking about the task of achieving new and more mature relationships with boys and girls your age as it appears in your life, report the way you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding my ability to achieve new and more mature relationships with boys and girls my age:

In relation to what I can do, I am...	1. doing the very best that I can	2. doing well, but not my best	3. doing satisfactorily without either "pushing" myself or "coasting"	4. not doing nearly as well as I know I can	5. doing far less than I could
In relation to what others do, I am...	1. among the very best of the people my age	2. better than most people my age	3. about like most people my age	4. not as well as most of the people my age	5. among the poorest of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing well and probably will be an outstanding success	2. more than adequate and probably will be very successful	3. generally adequate and probably will have only limited success	4. less than adequate and probably will have only limited success	5. doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK II - Achieving a Masculine or Feminine Social Role

It is important that you be accepted as "manly" or "masculine" by your friends if you are a young man and "ladylike" or "feminine" if you are a young woman. It would certainly be undesirable to be considered otherwise. It would probably mean that you would not be accepted and respected by others and that you would have difficulty fitting in socially with others your age.

For Boys: If you are a boy, being or becoming "manly" or "masculine" is somewhat related to your physical appearance. That is, more often than not, people expect that boys with superior physiques are more "masculine" than those with less impressive physical builds. It takes more than a good body build, however, to be accepted by others as "masculine" if you are a boy. More importantly, it means that others recognize you as a capable person in your own right, that you don't have to do silly or foolish things to be noticed. It also means that you do things which other people consider proper for a young man who is growing up.

For Girls: If you are a girl, being or becoming "feminine" usually means that you quit acting like a little girl, and instead act, talk, and walk in ways expected of a young lady. You do those things that are considered proper for a girl who is becoming a young woman, without being too "frilly" or "showy" in your dress and behavior.

For both young men and women, achieving a "masculine" or "feminine" social role is an important task in life. You can probably best accomplish it by establishing goals in life that are appropriate for young men and young women, by increasing the number of friends you have, by learning how to carry on a good conversation with others, and by dressing neatly in ways that are considered proper for young men and young women.

Many boys and girls learn to be a "man" or a "lady" from watching the ways their fathers and mothers, teachers and other adults or older brothers and sisters and friends act. Many get their ideas on how they should behave as boys or as girls from play, from reading, and from watching television and the movies.

Now, after thinking about the task of achieving a "masculine" or "feminine" social role in life, report the way you see and feel about yourself in relation to this task. Please circle the number of the *one* statement in *each* of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding my ability to achieve a masculine or feminine social role:

	1.	2.	3.	4.	5.
In relation to what I can do, I am...	doing the very best that I can	doing well, but not my best	doing satisfactorily without either "pushing" myself or "coasting	not doing nearly as well as I know I can	doing far less than I could
	1.	2.	3.	4.	5.
In relation to what others do, I am...	among the very best of the people my age	better than most people my age	about like most people my age	not as well as most of the people my age	among the poorest of the people my age
	1.	2.	3.	4.	5.
In relation to what it takes to be successful at this task, I am...	doing well and probably will be an outstanding success	more than adequate and probably will be very successful	generally adequate and probably will be fairly successful	less than adequate and probably will have only limited success	doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK III - Building Wholesome Attitudes Toward Oneself as a Growing Organism

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Growing up means that, from year to year and certainly over a period of a few years, we change in many ways. As we grow we become able to do more and more things. Probably the way we change most has to do with our physical appearance, that is, with our general size and shape, height, weight, physical features, abilities and skills. Even if we are not too pleased with our growth and our looks and while we may try to improve upon them, we have to get used to living with our changing selves and the way we look.

Some boys and girls develop a good idea about their growing up in general and about their changing bodies by trying to understand the changes that are taking place. They get help at school, from talking with and seeing others their age, and by talking with their parents and other adults.

How you feel about your physical build (physique), especially as it compares to others your age, and how you treat your body is one of the important tasks you face in life. We all know that there is not one among us who is so perfect in terms of body build that someone could not be found who is superior in one respect or another. Therefore, it is probably better if you make the best of what you have, and at the same time learn to live with your physical shortcomings.

Making the best of that you have depends on a number of things, the most important of which is probably what you intend to do in life. Certainly if you intend to become a professional football player or a professional model, there are certain physical requirements beyond the ordinary that you should possess. On the other hand, if what you intend to do is less demanding in terms of physique you may not need an extraordinary physical build--what you have may be perfectly acceptable if you keep yourself in good shape. You can, of course, permit your body to "run down" to the point where it cannot serve you well. For instance, by not eating properly you may become overweight or you may harm your body by smoking or drinking or by not giving it the rest it needs. When you do these things you are not using your body effectively.

The task of accepting your physique and using the body effectively, then, is one of realizing that while there are few perfect physical specimens in the world you can do certain things which will help you have a good attitude towards your own physical build. These things include watching what you eat so that you do not become overweight, dressing in such a manner as to make yourself look attractive but not "showy," exercising regularly, and avoiding injury to your body.

Now, after thinking about the task of accepting your physique and using your body effectively, report the way you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding my ability to accept my physical build and use my body effectively:

In relation to what I can do, I am...	1. doing the very best that I can	2. doing well, but not my best	3. doing satisfactorily without either "pushing" myself or "coasting"	4. not doing nearly as well as I know I can	5. doing far less than I could
In relation to what others do, I am...	1. among the very best of the people my age	2. better than most people my age	3. about like most people my age	4. not as well as most of the people my age	5. among the poorest of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing well and probably will be an outstanding success	2. more than adequate and probably will be very successful	3. generally adequate and probably will be fairly successful	4. less than adequate and probably will have only limited success	5. doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK IV - Achieving a Degree of Economic Independence

If you were able to pay your own way with your own money, without being told how much money you could spend, on what and where you could spend it, then you could be said to be economically independent. Very few young people your age are economically independent since they depend on their parents and other adults for their food, shelter, and clothing, for their education, and for much of their spending money. Nevertheless, as a young person you would like to feel assured that you are working towards the day when you will be able to take care of yourself without any help from anyone else.

Young people prepare for economic independence in a variety of ways. Some junior high school boys and girls are already thinking about the subjects they are going to take in high school to prepare them for college. Some are making sure that their high school courses will help them get a job right after graduation. Many, whether they plan to go to college or not, get jobs after school, on weekends, and during the summer so that they won't have to ask their parents for money to buy the things they want and to find out how well they can earn and budget money. All believe, however, that becoming economically independent is important enough to make plans for during junior high school years and all like to feel that they are making progress towards the time when they will be economically independent.

Now, after thinking about the task of achieving assurance of economic independence as it appears in your life, report the way you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding my ability to achieve assurance of economic independence:

	1.	2.	3.	4.	5.
In relation to what I can do, I am...	doing the very best that I can	doing well, but not my best	doing satisfactorily without either "pushing" myself or "coasting"	not doing nearly as well as I know I can	doing far less than I could
	1.	2.	3.	4.	5.
In relation to what others do, I am...	among the very best of the people my age	better than most people my age	about like most people my age	not as well as most of the people my age	among the poorest of the people my age
	1.	2.	3.	4.	5.
In relation to what it takes to be successful at this task, I am...	doing well and probably will be an outstanding success	more than adequate and probably will be very successful	generally adequate and probably will be fairly successful	less than adequate and probably will have only limited success	doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK V - Achieving Emotional Independence of Parents and Other Adults

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It would be wonderful to be able to make up your own mind about important things without being told by your parents or some other adult to do this but not that, or to do that but not this. Most young people your age want to be independent individuals with minds of their own but sometimes the adults in their lives get in the way. Healthy young people know that they have to grow up some day and they want to be allowed to do more and more of their own thinking and to make more and more of their own decisions without too much suggestion from their parents and other adults. Yet, they do want some help and support in making decisions on problems which they do not feel prepared to handle. Achieving independence from parents and other adults at this point in your life then is probably best described as feeling free to work out your own problems but with help (when you want it) from your parents and other important adults in your life. This means that you must have the trust and confidence of your parents and other adults and that they must have the trust and confidence in your ability to make sensible and responsible decisions in life. Then, as you gain more experience and improve your ability to make good decisions you gain more freedom to make them.

Young people your age strive to achieve emotional independence from parents and other adults in a variety of ways. Some seek the advice of friends when they are trying to make their own decisions rather than go to their parents or to their teachers. Some get mad and rebel against their parents to show that they have minds of their own. Some read books, magazines, and newspapers to gather other people's points of view to get ideas to help them solve problems and make independent decisions. Most people probably use all of the above approaches at some time or another in their lives in order to gain the emotional independence they desire.

Now, after thinking about the task of achieving emotional independence from your parents and other adults in your life, report the way you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding my ability to achieve emotional independence of my parents and other adults:

In relation to what I can do, I am...	1. doing the very best that I can	2. doing well, but not my best	3. doing satisfactorily without either "pushing" myself or "coasting"	4. not doing nearly as well as I know I can	5. doing far less than I could
In relation to what others do, I am...	1. among the very best of the people my age	2. better than most people my age	3. about like most people my age	4. not as well as most of the people my age	5. among the poorest of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing well and probably will be an outstanding success	2. more than adequate and probably will be very successful	3. generally adequate and probably will be fairly successful	4. less than adequate and probably will have only limited success	5. doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK VI - Achieving Personal Independence

One of the signs that shows we are growing up in a healthy way is when we are moving away from depending upon our parents and other adults. Taking our first steps as a baby made us less dependent upon someone else for getting around. Being able to make some decisions of our own and adding to our ability to care for ourselves are signs of becoming less dependent upon others.

Many junior high school students begin to show their own independence at home when they start to take responsibility for keeping their room neat, help their parents in other ways around the house, and earn their own spending money. Gaining personal freedom is taking place at home, at school and in other places where young people take responsibility for doing their part, without having to be told.

Think about this task of getting your personal independence or freedom and then report the way you see and feel about yourself in relation to developing this task. Do this by circling the number of the one statement in each of the three columns under the line which best describes your picture of yourself.

The way I see and feel about myself regarding achieving personal independence:

	1.	2.	3.	4.	5.
In relation to what I can do, I am...	doing very much less than I could	not doing nearly as well as I know I can	doing all right without either trying hard or loafing	doing well, but not my best	doing the very best that I can
	1.	2.	3.	4.	5.
In relation to what others do, I am...	doing the poorest of the people my age	not doing as well as most of the people my age	doing all right or about like most of the people my age	doing better than most people my age	doing the very best of the people my age
In relation to what it takes to be successful at this task, I am...	doing very poorly and could fail	doing less than all right and could have limited success	generally doing all right and may be fairly successful	doing better than all right and should be successful	doing very well and should be successful

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK VII - Planning and Preparing for an Occupation

That most people must work for a living seems to be a fact of life. The major portion of one's adult years, indeed, a large part of the adult's day, is spent on his job. If you are to find your work enjoyable as well as economically rewarding, much thought, planning, and study must be given to the selection of and preparation for an occupation. To know what kind of work is needed, what that work is like, what you can do well, and what you enjoy doing is very important in planning your future. Our standard of living, our friends and associates, and to a large measure our happiness, are all closely related to our jobs.

Many people your age work after school and during the summer. Their jobs not only help them to earn money but also help them to learn what work is like and what they like to do. Some junior high school students study about vocations and take vocational courses in school, talk to parents, teachers, counselors, employers, and friends to get help in understanding various kinds of jobs, what different jobs are like, the pay, and the preparation that is needed for entering and advancing in the field. You will have to consider all of these things when you begin to think about the courses you will take in high school. While some kids plan to go to college and others expect to start work immediately after high school, practically every young person must face the task of selecting and preparing for an occupation.

Now, after thinking about the task of selecting and preparing for an occupation as it appears in your life, report the way that you see and feel about yourself in relation to this task. Please circle the number of the *one* statement in *each* of the three columns below which is most descriptive of your picture of yourself.

The way I see and feel about myself regarding my ability to select and prepare for an occupation:

In relation to what I can do, I am...	1. doing the very best that I can	2. doing well, but not my best	3. doing satisfactorily without either "pushing" myself or "coasting"	4. not doing nearly as well as I know I can	5. doing far less than I could
In relation to what others do, I am...	1. among the very best of the people my age	2. better than most people my age	3. about like most people my age	4. not as well as most of the people my age	5. among the poorest of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing well and probably will be an outstanding success	2. more than adequate and probably will be very successful	3. generally adequate and probably will be fairly successful	4. less than adequate and probably will have only limited success	5. doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK VIII - Desiring and Achieving Socially Responsible Behavior

Nearly all of the important things that you need and would like to have can be achieved only with the help and cooperation of others. Just as you are dependent upon the group, so is the group dependent upon you for doing certain things if it is to survive. Learning how to get along with others and learning how to act in a way that shows and fulfills your responsibility to them (doing your part) is often difficult but very important for your happiness and for the well being of the group.

Many people your age learn to behave in a socially responsible way by joining and doing their part as a member of a group, by becoming leaders, by working on committees, by learning how to compromise when they "can't have their way." Other ways that people approach this task include learning how to: "act your age," dress appropriately, be "themselves," make friends and be accepted, and by learning how to get along with the group without doing things that would go against their beliefs.

Now, after thinking about the task of desiring and achieving socially responsible behavior, report the way that you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which is the most descriptive of your picture of yourself.

The way I see and feel about myself regarding the task of desiring and achieving socially responsible behavior:

	1.	2.	3.	4.	5.
In relation to what I can do, I am...	doing the very best that I can	doing well, but not my best	doing satisfactorily without either "pushing" myself or "coasting"	not doing nearly as well as I know I can	doing far less than I could
	1.	2.	3.	4.	5.
In relation to what others do, I am...	among the very best of the people my age	better than most people my age	about like most people my age	not as well as most of the people my age	among the poorest of the people my age
	1.	2.	3.	4.	5.
In relation to what it takes to be successful at this task, I am...	doing well and probably will be an outstanding success	more than adequate and probably will be very successful	generally adequate and probably will be fairly successful	less than adequate and probably will have only limited success	doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK IX - Developing Attitudes Toward Social Groups and Institutions

As we grow up we begin to spend a lot of time away from our parents and family and to be with a growing number of people, and different groups. As we do, we often come in contact with those who are different from us; for example, the way they look, their speech, their beliefs and general actions may be different from ours or those we know best. We also come in contact with groups of which we are a part. The way we see and feel about these people and groups influences the way we act towards them and how well we may get along with them.

Young people often have a feeling for, and a picture of, other people and groups, from what they hear their moms and dads say and see them do. Our own contact with them also has much to do with the social outlook we hold. Of course, the experiences which we have in our own schools, churches, families, social groups, and cities or towns add to the way we feel about these groups and the people in them.

Think about this task of developing attitudes toward these different groups and then report the way you see and feel about yourself in relation to gaining this task. Do this by circling the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding developing attitudes toward social groups and institutions:

In relation to what I can do, I am...	1. doing very much less than I could	2. not doing nearly as well as I know I can	3. doing all right without either trying hard or loafing	4. doing well, but not my best	5. doing the very best that I can
In relation to what others do, I am...	1. doing the poorest of the people my age	2. not doing as well as most of the people my age	3. doing all right or about like most of the people my age	4. doing better than most people my age	5. doing the very best of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing very poorly and could fail	2. doing less than all right and could have limited success	3. generally doing all right and may be fairly successful	4. doing better than all right and should be successful	5. doing very well and should be an outstanding success

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK X - Developing Intellectual Skills and Concepts Necessary for Civic Competence

Nearly everyone lives with and is dependent upon a group whether it be the family or in the larger sense the local or national community. Regardless of the beliefs, values, and ways of doing things that influence life in the group, each member has a part to play and duties to assume. Fulfilling the roles and responsibilities of a citizen in a democracy is especially difficult and requires that each citizen must think, know, and do more about the complicated problems of that democracy than citizens in any other form of social order. Learning the intellectual skills and concepts necessary for being a good citizen in our nation today is a difficult task for each young person and a very important one for the welfare and future of the nation.

Young people your age develop the skills and ideas necessary for living in a democracy in a variety of ways. They learn how our government works in their social studies classes, they learn how to work in groups through experience with school and church committees, they read the news sections in newspapers--not just the sports new and "the funnies." They learn how to get along with people.

Now after thinking about the task of developing these skills and ideas necessary for civic competence, report the way you see and feel about yourself in relation to this task. Please circle the number of the one statement in each of the three columns below which is most descriptive of your picture of yourself.

The way I see and feel about myself regarding my ability to develop intellectual skills and concepts necessary for civic competence:

	1.	2.	3.	4.	5.
In relation to what I can do, I am...	doing the very best that I can	doing well, but not my best	doing satisfactorily without either "pushing" myself or "coasting"	not doing nearly as well as I know I can	doing far less than I could
	1.	2.	3.	4.	5.
In relation to what others do, I am...	among the very best of the people my age	better than most people my age	about like most people my age	not as well as most of the people my age	among the poorest of the people my age
	1.	2.	3.	4.	5.
In relation to what it takes to be successful at this task, I am...	doing well and probably will be an outstanding success	more than adequate and probably will be very successful	generally adequate and probably will be fairly successful	less than adequate and probably will have only limited success	doing very poorly and may fail

THE DEVELOPMENTAL TASK OF ADOLESCENCE

TASK XI - Developing Conscience, Morality and a Scale of Values to Guide Behavior

Every day all of us meet problems in which we must choose the right or wrong thing to do. When we were very young our parents and other older persons made most of these choices for us, but as we grow older we must depend more and more on our own judgment as to the right way to act, about what is good or bad, and what we believe to be the most important things in our lives.

From watching our parents, teachers, other adults and young people our own age, we form our own system of beliefs about what is "right" and what is "wrong." For example, we have an idea about rules and how we should follow them when playing games, when at school and in other places. We all value certain things such as our moms and dads, our pets, our friends and our hobbies. We have an idea about what words like "cheating" "honesty," and "fairness" are, and what they mean in terms of how we should act ourselves.

Think about this task of developing and acquiring those things that help us make the right decisions for our daily living and then report the way you see and feel about yourself in relation to developing this task. Do this by circling the number of the one statement in each of the three columns below which best describes your picture of yourself.

The way I see and feel about myself regarding developing conscience, morality, and a scale of values:

In relation to what I can do, I am...	1. doing very much less than I could	2. not doing nearly as well as I know I can	3. doing all right without either trying hard or loafing	4. doing well, but not my best	5. doing the very best that I can
In relation to what others do, I am...	1. doing the poorest of the people my age	2. not doing as well as most of the people my age	3. doing all right or about like most of the people my age	4. doing better than most people my age	5. doing the very best of the people my age
In relation to what it takes to be successful at this task, I am...	1. doing very poorly and could fail	2. doing less than all right and could have limited success	3. generally doing all right and may be fairly successful	4. doing better than all right and should be successful	5. doing very well and should be an outstanding success

APPENDIX B

SAME SEX CLASS ORGANIZATION STUDY

JUNIOR HIGH EDUCATORS' REPORT FORM

SAME SEX CLASS ORGANIZATION STUDY

Joe Ellis, Director
Joan Peterson, Associate Director

Junior High Educators' Report Form

Educator's Name ______________________________

(Check where appropriate.) I am:

1) located at Belvidere Junior High School _____

2) located at N.I.U. Junior High _____

3) a principal _____

4) a counselor _____

5) a teacher

   (a) of the boys' group only _____

   (b) of the girls' group only _____

   (c) the mixed group only _____

   (d) of any combination of the above groups _____

      of math _____, science _____, or social studies _____

If respondent is an English/language arts ____ more than one of these ____ teachers.

CLASS FOR WHICH APPLICABLE ________________ HOUR ________

At this point in the school year we would like to have your general observations to the following aspects of the behavior of the students in the study for whom you are responsible. Please respond freely and use additional space if needed.

According to your observations and other data available to you:

1. Comment on their academic achievement.
   For the boys' group if applicable.

For the girls if applicable.

For the mixed group if applicable.

2. Their acceptance of responsibility for school related tasks and their performance of school work in an independent manner.

   For the boys if applicable.

   For the girls if applicable.

   For the mixed group if applicable.

3. The students' development of a healthy and wholesome concept of themselves.

   For the boys if applicable.

   For the girls if applicable.

   For the mixed group if applicable.

4. Acquisition of behavior patterns appropriate for his or her age that would indicate progression toward wholesome sex role identification.

For boys if applicable.

For girls if applicable.

For mixed group if applicable.

5. Realization that school rules were necessary and the acceptance with good feeling the authority imposed by the school.

For boys if applicable.

For girls if applicable.

For mixed group if applicable.

6. Anecdotes and any incidents that may be of significance and related to this study.

APPENDIX C

SAME SEX CLASS ORGANIZATION STUDY

REPORT FORM FOR THE STUDENT INTERVIEW

INTERVIEW DATA SHEET   Student's Name________________Section___ID____

			COMMENTS
1.	How did you feel about coming back to school this year?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
2.	How do you feel about school this year as compared to last year?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
3.	How do you feel about the section you are in?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
4.	Does being in a class with all boys (girls) make it easier for you to get good grades in school?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
5.	Do you think that being in a class with all boys (girls) makes it easier for other boys (girls) to get good grades in school?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
6.	Do you think that being in a class with just boys (girls) makes it easier for you to settle down, work hard, and do what you expect of yourself?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
7.	Would you rather have a man (woman) teacher?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
8.	Do you feel more like a boy (girl) in a class with all boys (girls)?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
9.	Are you more comfortable in a class with all boys (girls)?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
10.	How do you feel that others feel about you?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
11.	How do you feel about yourself as a person?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	
12.	Do you feel that you will learn more easily what is expected of you as a boy and man (girl and woman) by being in the section you are in?	$1\ \overset{-}{2}\ \overset{+}{3}\ 4\ 5$	

Pretests (September, 1967) and Post-tests (May, 1968) chosen to test the hypotheses were standardized achievement tests, the California Test of Personality, and the Ellis-Many-Frey Self-Concept Scale, Form J.

All five of the null hypotheses tested by the study were supported by the treatment of analysis of covariance. The few significant differences attributed to the interaction of the dependent variables and the grouping effect were judged to be spurious. The findings of the study were in essential agreement with the literature of early adolescence--that is, that girls in general have a more positive attitude toward school, receive better grades, and achieve higher in school studies related to language arts, irrespective of age, grade, or assigned group.